DOCUMENT RESUME

ED 096 922 HE 005 950

TITLE Radiation Protection Enrollments and Degrees. Enrollments--Fall 1973. Degrees Granted July 1965-June 1973.

INSTITUTION Atomic Energy Commission, Washington, D.C. Div. of Labor Relations.

PUB DATE Jul 74

NOTE 31p.

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE

DESCRIPTORS *Degrees (Titles); *Enrollment; Females; *Higher Education; Minority Groups; *Nuclear Physics; *Radiation; Statistical Data; Student Placement

ABSTRACT

The demand for radiation protection personnel has increased during the past several years and can be expected to continue to increase for several years to come. This document gives the results of the latest survey of institutions offering degree programs in this field. Such a small segment of the total college enrollment is represented in health physics and related studies that other surveys cannot single them out. These students are vital, however, to the continued development and use of radioactive materials in industry, medicine, construction, research, power production, and even agriculture. This publication should be of value to those seeking graduates in various curriculums included, as well as to those who have an interest in pursuing careers in the field. The document covers: trends, placement, foreign nationals, women, and minorities. Appendices include statistical tables accompanying the text. (Author/PG)

ED 096922

WASH-1229 (74)

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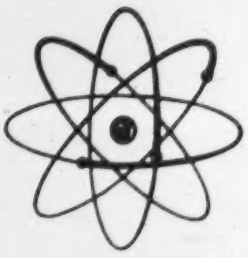
RADIATION PROTECTION

ENROLLMENTS AND DEGREES

ENROLLMENTS-FALL 1973

DEGREES GRANTED JULY 1965- JUNE 1973



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UNITED STATES ATOMIC ENERGY COMMISSION
Division of Labor Relations

JULY 1974

The demand for radiation protection personnel has increased during the past few years and can be expected to continue to increase for several years to come. Radiation Protection Enrollments and Degrees gives the results of the latest survey of institutions offering degree programs in this field. Such a small segment of the total college enrollment is represented in health physics and related studies that other surveys cannot single them out. These students are vital, however, to the continued development and use of radioactive materials in industry, medicine, construction, research, power production, and even agriculture. This publication should be of value to those seeking graduates in the various curriculums included as well as to those who have an interest in pursuing careers in the field.

H. T. Herrick, Director
Division of Labor Relations

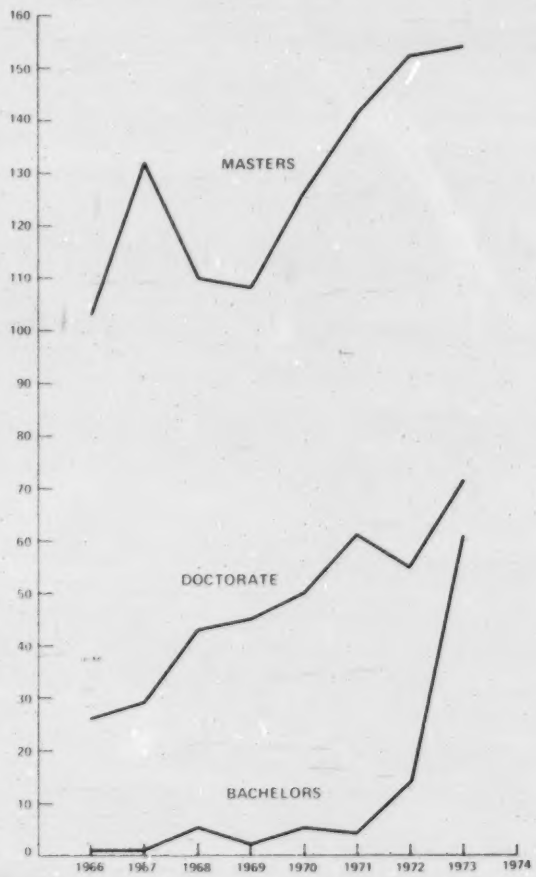
RADIATION PROTECTION
ENROLLMENTS AND DEGREES
1973

INTRODUCTION

This is the third annual survey of the supply of radiation protection personnel, and the universe of the study has been expanded each year as additional programs are identified. Three institutions and a department were added to the universe of the present survey and to the historical data shown in Appendix 1 and in Figure 1. Other institutions have expanded their programs over the years to offer additional levels of degrees. All of these additions have served to improve the outlook for the supply of radiation protection personnel since the last more pessimistic report.[1] Demand estimates, however, are also higher because of the rapidly increasing uses of radioactive materials in medicine and industry and the acceleration planned in nuclear power development. The net result is a continuing demand for radiation protection personnel which is quickly absorbing the supply.

The numbers reported in this survey are somewhat skewed because of the inclusion of additional students and graduates of the biophysics programs at the University of California at Berkeley. Although students of the university planning careers in radiation protection had been included in the past, it was determined that many other students in the biophysics programs were completing the same core of radiation protection courses and could fill positions requiring them to "participate in conducting, coordinating, directing or planning a program for the evaluation or control of radiation hazards for an installation, community, or state agency . . . ." (see Appendix 6). Irrespective of the career plans of many of these students, their capability to perform the radiation protection functions described above would still be valid, as shown by the findings of Dr. Dade W. Moeller in his analysis of the records of applications for certification by the American Board of Health Physics.[2] Graduates whose field of study had been radiation biology or biophysics were certified at a rate of 76.6 percent compared to 69.4 percent of those whose study field had been health physics and 71.4 percent of those whose study field had been physics and mathematics. The extent to which these biophysics students are included in the numbers used in this report should be noted when evaluating the potential supply of radiation protection personnel. Adjustments in historical data as reported in Appendix 1 have not been made for prior years' graduates of this department.

FIGURE 1
TRENDS IN RADIATION PROTECTION
EDUCATION DEGREES GRANTED 1966–1973



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alone took 16 percent, with another 10 percent going to medical facilities (see Table 1 and Figure 2). Most active recruitment by industry and medicine was for masters' graduates. Industry recruited 19 percent of all MS graduates and medical facilities took 12 percent. As in past years, the U.S. Government and its contractors recruited at the graduate level, taking 11 percent of master's and 22 percent of the PhD graduates.

The 29 percent of the 1972-73 MS graduates remaining for further study compares to 33 percent who remained in 1971-72. Thirty-one percent of the BS graduates and a surprising 11 percent of PhD's also went on for further study compared to 54 percent and four percent, respectively, in 1971-72. Only 23 percent of PhD's went into academic employment compared to 36 percent last year.

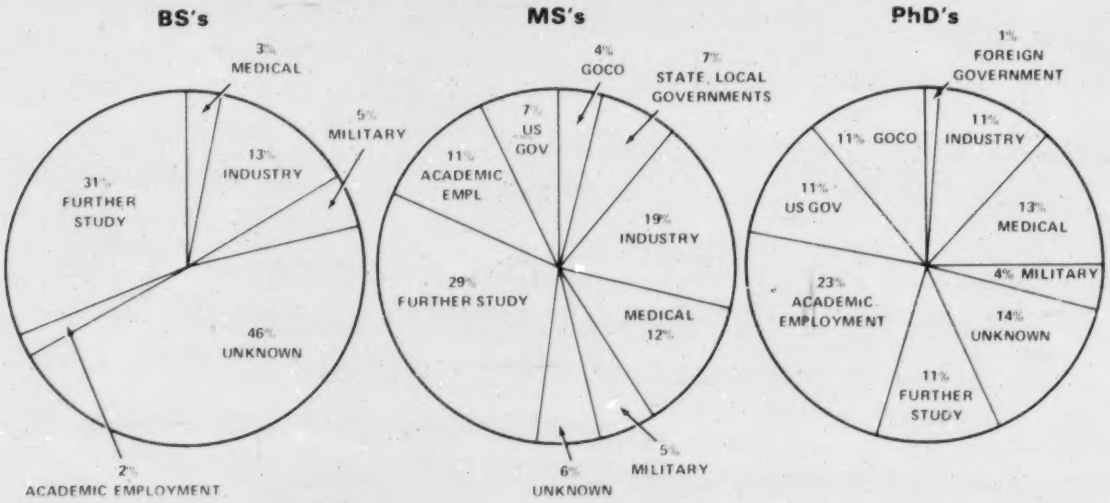
Employment by State and local governments dropped from 11 percent of MS's in 1971-72 to seven percent. These agencies appear to recruit almost exclusively at the MS-level (see Table 1). Figure 2 shows the relative placement of the graduates at all three degree levels.

TABLE 1
POST-GRADUATION PLACEMENT OR PLANS OF RADIATION PROTECTION GRADUATES 1972-1973

Placement or Plans after Graduation	GRADUATES JULY 1972 - JUNE 1973 Total		Bachelors		Masters		Doctors*	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Further study	72	25	19	31	45	29	8	11
Academic employment	34	12	1	2	17	11	16	23
U. S. Government employment	19	7	-		11	7	8	11
GOCO (Government-Owned, contractor operated)	14	5	-		6	4	8	11
State and local Government	12	4	-		11	7	1**	1
Medical facilities employment (Including teaching hospitals)	30	10	2	3	19	12	9	13
Industry employment	45	16	8	13	29	19	8	11
Military Service	13	5	3	5	7	5	3	4
Unknown	47	16	28	46	9	6	10	14

* Total does not add to 100 because of rounding
** Foreign Government

FIGURE 2
RADIATION PROTECTION GRADUATE PLACEMENT 1973



FOREIGN NATIONALS

Foreign nationals among radiation protection graduates represented only five percent of the total (see Table 2), the same percentage as in 1971-72. In that year, all graduates who were non-U.S. citizens received MS degrees. The 1972-73 non-citizen graduates received one BS, eight MS and four PhD degrees. At least one of the PhD recipients went to work for a foreign government.

Non-citizens among graduate enrollees in the Fall of 1973 represented nine percent at both the MS and PhD levels. Six percent of seniors and three percent of juniors were foreign nationals.

Appendix 3 shows the number of foreign nationals by institution.

TABLE 2
FOREIGN NATIONALS ENROLLMENTS AND DEGREES IN RADIATION PROTECTION

ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 – JUNE 1973							
JUNIOR YEAR		SENIOR YEAR		MASTERS		DOCTORATE		BACHELOR		MASTERS		DOCTORATE		TOTAL	
#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
3	3	6	6	29	9	33	9	1	2	8	5	4	6	13	5

WOMEN AND MINORITIES

No accurate information has been available to indicate the degree of participation by women and minorities in the radiation protection field. A cursory examination of the roster of certified health physicists or the membership list of the Health Physics Society reveals very few female, oriental, or Spanish names. At any gathering of radiation protection personnel, one finds very few, if any, identifiable minority group representatives. Radiation protection is a field which should interest the scientifically talented student with humanitarian leanings, regardless of sex or ethnic origin.

To get more accurate information on the numbers of women and minorities training in the radiation protection field, the AEC modified the enrollment and degree data collection form (see Appendix 6) to obtain such information. It was gratifying to find that women are beginning to enter programs of radiation protection in increasing numbers, and the three receiving PhD's made up four percent of the total PhD's. Women also represented six percent of MS and eight percent of BS graduates (see Table 3 and Appendix 3). These figures are substantially higher than the estimated three percent or less who are presently in the field. Indicative of the increasing interest in the field by women is the present enrollment: 23 or seven percent of the PhD's; 24 or eight percent of the MS's; eight seniors, and 24 juniors are women.

Blacks are greatly underrepresented as evidenced by the few participating at all levels. Two blacks (three percent) received PhD's and only two, or less than one percent, are PhD candidates (see Appendix 3). Only one black received an MS, and four are presently enrolled in MS programs. However, three percent of seniors and 16 percent of juniors are blacks.

Spanish-speaking (or Spanish-surnamed) persons represent an even smaller proportion in the field. There was only one Spanish-speaking graduate a PhD. Spanish-speaking degree candidates include two working for PhD's, five working for MS's, and one undergraduate senior. Six Spanish-speaking juniors represent five percent of total juniors in radiation protection.

U.S. citizens of oriental extraction are generally represented in larger numbers than blacks. Two PhD, four master's and one bachelor's degrees were awarded to this ethnic group. Three full-time and one part-time PhD candidates, six full-time and one part-time Master's degree candidates, and four seniors are in this category.

The increased participation by female, black, and Spanish-speaking persons at the undergraduate junior level as shown in Table 3 is not indicative of a nationwide trend, however. Most credit must be given to a new BS-level program at Manhattan College,

which has aggressively sought minorities and women. Participants in this program have just reached the junior level and represent 50 percent of the women, 94 percent of the blacks, and 100 percent of the Spanish-speaking juniors reported in this study.

TABLE 3
WOMEN AND MINORITIES ENROLLMENTS AND DEGREES IN RADIATION PROTECTION

	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 – JUNE 1973							
	JUNIOR YEAR		SENIOR YEAR		MASTER		DOCTORATE		BACHELOR		MASTER		DOCTORATE		TOTAL	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Women, U.S. Citizens	24	22	8	8	24	8	23	7	5	8	9	6	3	4	17	6
Blacks, U.S. Citizens	18	16	3	3	4	1	2	1	0	–	1	1	2	3	3	1
Spanish Speaking, U.S. Citizens	6	5	1	1	5	2	2	1	0	–	0	–	1	1	1	–
Oriental, U.S. Citizens	0	–	4	4	7	2	4	1	1	2	4	3	2	3	7	2

1. USAEC, *Radiation Protection Enrollment and Degree Survey*, WASH-1229 (73), which is the source of all references to 1971-72 information throughout this study.

2. Moeller, Dade W., *Analysis of the Records of American Board of Health Physics Applicants*, HSPH/EHS 70-3, Harvard University, Boston, July 1970.

3. U.S. Atomic Energy Commission, Regulatory Guide 8.8, "Information Relevant to Maintaining Occupational Radiation Exposure as Low as Practicable (Nuclear Reactors)," July 1973.

Appendix 1

RADIATION PROTECTION
DEGREES GRANTED 1966-1973

B=Bachelor
M=Master
D=Doctorate

STATE / INSTITUTION (JULY – JUNE)	1965 1966			1966 1967			1967 1968			1968 1969			1969 1970			1970 1971			1971 1972			1972 1973		
	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D
Alabama																								
Univ. of Alabama, Birmingham .																NEW PROGRAM						-	-	-
California																								
Univ. of California, Berkeley.	-	3	2	-	5	1	-	5	2	-	3	-	-	1	-	-	4	3	-	5	-	25	4	9
Univ. of California, LA. . . .	-	3	-	-	3	2	-	1	3	-	2	3	-	2	1	-	6	2	-	6	-	-	8	2
Colorado																								
Colorado State University. . .	-	2	1	-	9	-	-	2	3	-	10	4	-	8	4	-	5	3	-	6	6	-	7	10
Connecticut																								
Yale University.	-	-	-	-	5	-	-	4	-	-	3	-	-	4	-	-	1	-	Cancelled					
Florida																								
Univ. of Florida	-	6	-	-	6	1	-	2	1	-	5	1	-	2	1	-	11	2	-	12	3	-	10	2
Univ. of Miami, Sch. of Medicine	-	4	-	-	6	-	-	7	-	-	4	-	-	5	-	-	-	-	-	1	-	-	7	-
Georgia																								
Emory Univ. Sch. of Medicine 1/	-	2	-	-	10	-	-	2	-	-	-	-	-	2	-	-	-	-	-	5	-	-	3	-
Georgia Inst. of Technology. 2/	-	5	-	-	4	-	-	3	-	-	6	-	-	4	1	-	4	4	1	12	1	5	10	3
Illinois																								
Univ. of Illinois, Urbana. . .	-	-	2	-	-	1	-	1	3	-	1	-	-	-	1	-	5	1	-	5	1	-	2	1
Northwestern University. . . .	-	1	-	-	1	-	-	1	-	-	1	-	-	3	1	-	2	1	-	3	1	1	4	2
Indiana																								
Purdue University.	-	7	5	-	6	5	-	3	4	-	5	11	-	6	10	-	5	6	2	4	8	6	11	12
Iowa																								
Univ. of Iowa 1/	-	-	-	-	-	1	-	3	-	-	1	1	-	2	2	-	-	1	-	1	1	-	1	3
Kansas																								
Univ. of Kansas.	1	2	-	1	4	1	1	5	3	1	2	3	3	4	8	-	2	3	1	4	5	2	3	5
Kentucky																								
U. of Kentucky, Medical Center	(Graduate Program started January 1968)												-	1	-	-	1	-	-	1	-	-	4	-

RADIATION PROTECTION - DEGREES GRANTED - 1966-1972 - By Institution

STATE / INSTITUTION (JULY – JUNE)	1965 1966			1966 1967			1967 1968			1968 1969			1969 1970			1970 1971			1971 1972			1972 1973		
	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D
Maryland																								
Johns Hopkins University	-	-	1	-	-	1	-	-	-	-	1	3	-	-	1	-	2	1	-	-	1	-	-	2
Massachusetts																								
Harvard University	-	1	-	-	1	-	-	6	-	-	2	1	-	5	1	-	4	1	-	4	2	-	2	1
Lowell Tech. Institute							-	-	-	-	-	-	-	-	-	-	NEW PROGRAM		-	-		9	1	-
Michigan																								
Univ. of Michigan	-	8	3	-	17	2	-	2	1	-	10	1	-	5	1	-	5	3	-	8	3	-	5	3
Minnesota																								
Univ. of Minnesota	-	5	-	-	2	-	-	1	-	-	4	-	-	3	-	-	4	-	-	3	-	-	8	-
New Jersey																								
Rutgers, The State Univ.	-	11	-	-	7	-	-	12	-	-	6	-	-	10	3	-	8	4	-	4	2	-	9	2
New York																								
Manhattan College	Program at B.S. level began Fall 1972						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
New York Univ. Medical Center	-	4	1	-	2	6	-	2	4	-	5	-	-	6	3	-	4	3	1	6	1	-	7	3
Rensselaer Polytechnic Inst.	-	-	2	-	1	4	-	-	-	-	2	3	-	-	-	-	1	1	-	2	-	-	2	-
Sloan-Kettering Div.-Cornell 1/	-	-	2	-	-	1	-	-	1	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-
U. of Rochester, Sch. of Medicine and Dentistry	-	1	1	-	4	1	-	4	-	-	2	-	-	6	-	-	1	10	-	4	4	-	4	3
North Carolina																								
North Carolina State Univ.	-	-	-	-	1	-	-	1	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	-
Univ. of North Carolina	-	5	-	-	5	1	-	6	1	-	8	-	-	7	3	-	7	-	-	5	-	-	4	-
Ohio																								
Univ. of Cincinnati, Cincinnati General Hospital	-	2	1	-	3	-	-	2	-	-	4	-	-	6	-	-	10	-	-	9	-	-	9	-
Oklahoma																								
Univ. of Oklahoma	-	10	2	-	8	-	-	10	3	-	2	2	-	6	-	-	12	2	-	9	-	-	2	1

RADIATION PROTECTION - DEGREES GRANTED - 1966-1973 - By Institution

STATE / INSTITUTION (JULY – JUNE)	1965 1966			1966 1967			1967 1968			1968 1969			1969 1970			1970 1971			1971 1972			1972 1973		
	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D
Pennsylvania																								
Duquesne University	Program began Fall 1972																							
Temple University	-	3	-	-	7	-	-	3	-	-	1	-	-	2	-	-	8	1	-	-	-	-	-	-
U. of Pennsylvania Hospital	-	-	-	-	-	-	-	-	2	-	1	1	-	-	-	-	-	-	8	2	-	8	2	1
Univ. of Pittsburgh	-	6	1	-	4	1	-	8	-	-	3	1	-	6	1	-	5	-	-	-	-	-	-	-
																			-	5	2	-	12	-
Puerto Rico																								
Univ. of Puerto Rico	-	-	-	-	-	-	-	-	-	-	5	-	-	5	-	-	5	-	-	10	-	-	4	-
Tennessee																								
Univ. of Tennessee	-	1	-	-	2	-	-	2	7	-	2	3	1	1	3	3	5	5	-	3	3	-	2	-
Vanderbilt University 1/	-	10	-	-	4	-	4	2	3	1	2	7	1	3	3	1	4	2	1	3	10	-	1	5
Texas																								
Texas A&M University	-	-	-	-	-	-	-	1	-	-	2	-	-	4	1	-	8	-	-	4	-	5	5	-
Univ. of Texas	-	1	2	-	-	-	-	4	2	-	-	-	-	1	1	-	1	2	-	-	-	Program Cancelled		
Washington																								
Univ. of Washington	-	-	-	-	5	-	-	5	-	-	2	-	-	4	-	-	-	-	-	5	-	-	1	1
TOTAL	1	103	26	1	132	29	5	110	43	2	108	45	5	126	50	4	141	61	14	152	55	61	154	71

1/ Added to universe this year.

2/ Dept. of Physics graduates added; Dept. of Engineering graduates previously reported.

3/ Four graduates with Master's and Ph.D.'s were counted by the University only at Master's level to avoid inflation of totals, 1966-1967.

APPENDIX 2

ENROLLMENTS AND DEGREES IN SUBFIELDS BY INSTITUTION
RADIATION PROTECTION

FT Full Time
PT Part Time

STATE - INSTITUTION AND SUBFIELD	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
ALABAMA											
UNIVERSITY OF ALABAMA IN BIRMINGHAM											
RADIOBIOLOGY OR BIOPHYSICS	0	0	1	0	0	0	0	0			
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	1	0	0	0	0	0	0	0			
SCHOOL TOTAL	1	0	1	0	0	0	0	0	0	0	0
STATE TOTAL	1	0	1	0	0	0	0	0	0	0	0
CALIFORNIA											
UNIVERSITY OF CALIFORNIA, BERKELEY											
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION	0	0	0	0	2	0	1	0	0	2	1
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS	0	0	0	0	0	0	3	0	0	0	1
RADIOBIOLOGY OR BIOPHYSICS	10	0	25	0	2	0	91	0	25	0	7
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	0	0	0	0	13	0	0	0	0	2	0
SCHOOL TOTAL	10	0	25	0	17	0	95	0	25	4	9
UNIVERSITY OF CALIFORNIA, LOS ANGELES											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS					17	1	20	1		8	2
SCHOOL TOTAL	0	0	0	0	17	1	20	1	0	8	2
STATE TOTAL	10	0	25	0	34	1	115	1	25	12	11
COLORADO											
COLORADO STATE UNIVERSITY											
VETERINARY RADIOLOGY					1		1				
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION										1	1
RADIOBIOLOGY OR BIOPHYSICS					3		15			3	7
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					4		4	2		3	2
SCHOOL TOTAL	0	0	0	0	8	0	20	2	0	7	10
STATE TOTAL	0	0	0	0	8	0	20	2	0	7	10
FLORIDA											
UNIVERSITY OF FLORIDA											
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION					1						
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS					6		2			4	1
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					4		2	1		6	1
SCHOOL TOTAL	0	0	0	0	11	0	4	1	0	10	2
UNIVERSITY OF MIAMI											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					3	2				7	
SCHOOL TOTAL	0	0	0	0	3	2	0	0	0	7	0
STATE TOTAL	0	0	0	0	14	2	4	1	0	17	2

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ENROLLMENTS AND DEGREES IN SUBFIELDS BY INSTITUTION
RADIATION PROTECTION

STATE - INSTITUTION AND SUBFIELD	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
GEORGIA											
EMORY UNIVERSITY											
RADIOLOGICAL SCIENCE											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION			1		6					3	
SCHOOL TOTAL	0	0	1	0	6	0	0	0	0	3	0
GEORGIA INSTITUTE OF TECHNOLOGY											
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION	3		2						3		
RADIOBIOLOGY OR BIOPHYSICS	6		6		2		3		2		1
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					14	2	8			10	2
SCHOOL TOTAL	9	0	8	0	16	2	11	0	5	10	3
STATE TOTAL	9	0	9	0	22	2	11	0	5	13	3
ILLINOIS											
NORTHWESTERN UNIVERSITY											
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION			2								
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					2	6	3	2	1	4	2
SCHOOL TOTAL	0	0	2	0	2	6	3	2	1	4	2
UNIVERSITY OF ILLINOIS AT URBANA											
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION	0	0	0	0	4	0	0	0	0	1	0
RADIOBIOLOGY OR BIOPHYSICS	0	0	0	0	1	0	28	0	0	1	1
SCHOOL TOTAL	0	0	0	0	5	0	28	0	0	2	1
STATE TOTAL	0	0	2	0	7	6	31	2	1	6	3
INDIANA											
PURDUE UNIVERSITY											
ENVIRONMENTAL HEALTH	15	0	3	0	4	0	12	0	5	4	6
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS	0	0	0	0	0	0	5	0	0	1	0
RADIOBIOLOGY OR BIOPHYSICS	0	0	0	0	1	0	0	0	0	0	0
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	2	0	0	0	3	0	14	1	1	6	6
SCHOOL TOTAL	17	0	3	0	8	0	31	1	6	11	12
STATE TOTAL	17	0	3	0	8	0	31	1	6	11	12
IOWA											
UNIVERSITY OF IOWA											
RADIOBIOLOGY OR BIOPHYSICS					4		7			1	3
SCHOOL TOTAL	0	0	0	0	4	0	7	0	0	1	3
STATE TOTAL	0	0	0	0	4	0	7	0	0	1	3

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ENROLLMENTS AND DEGREES IN SUBFIELDS BY INSTITUTION
RADIATION PROTECTION

STATE - INSTITUTION AND SUBFIELD	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
KANSAS											
UNIVERSITY OF KANSAS											
RADIATION BIOPHYSICS											1
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS	2		1		2				2		
RADIOBIOLOGY OR BIOPHYSICS					1	3	3	4			1
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION						2	1	1			1
SCHOOL TOTAL					2	2	1	1		2	1
STATE TOTAL	2	0	1	0	5	7	5	6	2	3	5
KENTUCKY	2	0	1	0	5	7	5	6	2	3	5
UNIVERSITY OF KENTUCKY											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					8					3	
SCHOOL TOTAL					2					1	
STATE TOTAL	0	0	0	0	10	0	0	0	0	4	0
MARYLAND	0	0	0	0	10	0	0	0	0	4	0
JOHNS HOPKINS UNIVERSITY											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS											
RADIOBIOLOGY OR BIOPHYSICS						1	3	1			1
SCHOOL TOTAL					1						
STATE TOTAL	0	0	0	0	1	1	3	1	0	0	2
MASSACHUSETTS	0	0	0	0	1	1	3	1	0	0	2
HARVARD UNIVERSITY											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS					4		5		0	0	0
RADIOBIOLOGY OR BIOPHYSICS					1		5		0	1	1
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					1		5		0	1	0
SCHOOL TOTAL											
LOWELL TECHNOLOGICAL INSTITUTE	0	0	0	0	6	0	15	0	0	2	1
RADIOLOGICAL SCIENCE											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					5					1	
SCHOOL TOTAL	12	2	26	5					9		
STATE TOTAL	12	2	26	5	5	0	0	0	9	1	0
MICHIGAN	12	2	26	5	11	0	15	0	9	3	1
UNIVERSITY OF MICHIGAN											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					15	2	3	1		5	3
SCHOOL TOTAL											
STATE TOTAL	0	0	0	0	15	2	3	1	0	5	3
	0	0	0	0	15	2	3	1	0	5	3

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ENROLLMENTS AND DEGREES IN SUBFIELDS BY INSTITUTION
RADIATION PROTECTION

STATE - INSTITUTION AND SUBFIELD	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
MINNESOTA											
UNIVERSITY OF MINNESOTA											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	0	0	0	0	8	1	0	2	0	8	0
SCHOOL TOTAL	0	0	0	0	8	1	0	2	0	8	0
STATE TOTAL	0	0	0	0	8	1	0	2	0	8	0
NEW JERSEY											
RUTGERS UNIVERSITY											
AEROSOL PHYSICS					0	0	1	4	0	0	1
ENVIRONMENTAL RADIOACTIVITY					0	0	0	1	0	0	0
RADIATION CHEMISTRY					1	0	0	1	0	0	0
RADIOBIOLOGY OR BIOPHYSICS					0	0	1	1	0	0	1
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					11	21	0	0	0	9	0
SCHOOL TOTAL	0	0	0	0	12	21	2	7	0	9	2
STATE TOTAL	0	0	0	0	12	21	2	7	0	9	2
NEW YORK											
MANHATTAN COLLEGE											
RADIOLOGY ADMINISTRATION		11		4							
NUCLEAR MEDICINE BASIC SCIENCES		3									
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS		6		2							
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION		19		1							
SCHOOL TOTAL	0	39	0	7	0	0	0	0	0	0	0
N.Y.U. MEDICAL CENTER											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					11	4	17	12		7	3
SCHOOL TOTAL	0	0	0	0	11	4	17	12	0	7	3
RENSSELAER POLYTECHNIC INSTITUTE											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					5			1		2	
SCHOOL TOTAL	0	0	0	0	5	0	0	1	0	2	0
SLOANE-KETTERING DIV - CORNELL UNIVERSITY											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS					2						
RADIOBIOLOGY OR BIOPHYSICS							2				
SCHOOL TOTAL	0	0	0	0	2	0	2	0	0	0	0
UNIVERSITY OF ROCHESTER											
RADIOBIOLOGY OR BIOPHYSICS					1	2	15			4	3
SCHOOL TOTAL	0	0	0	0	1	2	15	0	0	4	3
STATE TOTAL	0	39	0	7	19	6	34	13	0	13	6

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ENROLLMENTS AND DEGREES IN SUBFIELDS BY INSTITUTION
RADIATION PROTECTION

STATE - INSTITUTION AND SUBFIELD	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
NORTH CAROLINA											
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	0		0		1		0		0	0	0
SCHOOL TOTAL	0	0	0	0	1	0	0	0	0	0	0
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					11	1		3		4	
SCHOOL TOTAL	0	0	0	0	11	1	0	3	0	4	0
STATE TOTAL	0	0	0	0	12	1	0	3	0	4	0
OHIO											
UNIVERSITY OF CINCINNATI											
RADIOLOGY ADMINISTRATION											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS					4					6	
					3					3	
SCHOOL TOTAL	0	0	0	0	7	0	0	0	0	9	0
STATE TOTAL	0	0	0	0	7	0	0	0	0	9	0
OKLAHOMA											
UNIVERSITY OF OKLAHOMA											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION							3	1		2	1
SCHOOL TOTAL	0	0	0	0	0	0	3	1	0	2	1
STATE TOTAL	0	0	0	0	0	0	3	1	0	2	1
PENNSYLVANIA											
DUQUESNE UNIVERSITY											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	1		1						0		
SCHOOL TOTAL	1	0	1	0	0	0	0	0	0	0	0
TEMPLE UNIVERSITY											
RADIOPHARMACY											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	7		5		1				8		
					3		4			2	1
SCHOOL TOTAL	7	0	5	0	4	0	4	0	8	2	1
UNIVERSITY OF PENNSYLVANIA											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS								2			
SCHOOL TOTAL	0	0	0	0	0	0	0	2	0	0	0
UNIVERSITY OF PITTSBURGH											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					13	7		4		12	
SCHOOL TOTAL	0	0	0	0	13	7	0	4	0	12	0

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ENROLLMENTS AND DEGREES IN SUBFIELDS BY INSTITUTION
RADIATION PROTECTION

STATE - INSTITUTION AND SUBFIELD	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
STATE TOTAL	8	0	6	0	17	7	4	0	8	14	1
PUERTO RICO											
UNIVERSITY OF PUERTO RICO, RIO PIEDRAS											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					4	2				4	
SCHOOL TOTAL	0	0	0	0	4	2	0	0	0	4	0
STATE TOTAL	0	0	0	0	4	2	0	0	0	4	0
TENNESSEE											
UNIVERSITY OF TENNESSEE, KNOXVILLE											
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					8		6			2	
SCHOOL TOTAL	0	0	0	0	8	0	6	0	0	2	0
VANDERBILT UNIVERSITY											
NUCLEAR PHYSICS					1		4				1
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION										1	
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS					1		2				
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					1		2				4
SCHOOL TOTAL	0	0	0	0	3	0	8	0	0	1	5
STATE TOTAL	0	0	0	0	11	0	14	0	0	3	5
TEXAS											
TEXAS A & M UNIVERSITY											
RADIOBIOLOGY OR BIOPHYSICS										1	
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	10		10		6	2	1	1	5	4	
SCHOOL TOTAL	10	0	10	0	6	2	1	1	5	5	0
STATE TOTAL	10	0	10	0	6	2	1	1	5	5	0
WASHINGTON											
UNIVERSITY OF WASHINGTON											
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS					2						
RADIOBIOLOGY OR BIOPHYSICS											1
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION					7	2				1	
SCHOOL TOTAL	0	0	0	0	9	2	0	0	0	1	1
STATE TOTAL	0	0	0	0	9	2	0	0	0	1	1
GRAND TOTAL	69	41	83	12	244	63	303	48	61	154	71

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APPENDIX 3

MINORITIES, WOMEN
AND
FOREIGN NATIONALS
ENROLLMENTS AND DEGREES BY SCHOOLS
RADIATION PROTECTION

STATE - INSTITUTION	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
CALIFORNIA											
UNIVERSITY OF CALIFORNIA, BERKELEY											
ORIENTAL, U.S. CITIZENS			3							1	2
FOREIGN NATIONALS - ALL CURRICULA			5							1	2
UNIVERSITY OF CALIFORNIA, LOS ANGELES											
ORIENTAL, U.S. CITIZENS					2		3			1	
BLACKS, U.S. CITIZENS							1	1			
WOMEN, U.S. CITIZENS					1		3				
FOREIGN NATIONALS - ALL CURRICULA							1				
COLORADO											
COLORADO STATE UNIVERSITY											
SPANISH SPEAKING U.S. CITIZENS											1
WOMEN, U.S. CITIZENS					2		2				1
FOREIGN NATIONALS - ALL CURRICULA							3			1	
FLORIDA											
UNIVERSITY OF FLORIDA											
WOMEN, U.S. CITIZENS					1					1	
UNIVERSITY OF MIAMI											
WOMEN, U.S. CITIZENS					1						
GEORGIA											
EMORY UNIVERSITY											
WOMEN, U.S. CITIZENS			1		1						
FOREIGN NATIONALS - ALL CURRICULA					1						
GEORGIA INSTITUTE OF TECHNOLOGY											
BLACKS, U.S. CITIZENS						2					
FOREIGN NATIONALS - ALL CURRICULA					2		2				
ILLINOIS											
NORTHWESTERN UNIVERSITY											
ORIENTAL, U.S. CITIZENS						1		1		2	
WOMEN, U.S. CITIZENS			1								
UNIVERSITY OF ILLINOIS AT URBANA											
ORIENTAL, U.S. CITIZENS	0	0	0	0	1	0	0	0	0	0	0
BLACKS, U.S. CITIZENS	0	0	0	0	0	0	0	0	0	0	1
FOREIGN NATIONALS - ALL CURRICULA	0	0	0	0	0	0	5	0	0	0	0

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MINORITIES, WOMEN
AND
FOREIGN NATIONALS
ENROLLMENTS AND DEGREES BY SCHOOLS
RADIATION PROTECTION

STATE - INSTITUTION	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
INDIANA											
PURDUE UNIVERSITY											
ORIENTAL, U.S. CITIZENS	0	0	0	0	1	0	0	0	0	0	0
BLACKS, U.S. CITIZENS	1	0	0	0	0	0	0	0	0	1	0
WOMEN, U.S. CITIZENS	8	0	1	0	0	0	2	0	5	0	0
FOREIGN NATIONALS - ALL CURRICULA	0	0	0	0	0	0	8	0	0	2	1
IOWA											
UNIVERSITY OF IOWA											
SPANISH SPEAKING U.S. CITIZENS					1						
WOMEN, U.S. CITIZENS					1		1				
FOREIGN NATIONALS - ALL CURRICULA					1		2				
KANSAS											
UNIVERSITY OF KANSAS											
WOMEN, U.S. CITIZENS			1		1			1			
FOREIGN NATIONALS - ALL CURRICULA					1	1	1	1		1	
KENTUCKY											
UNIVERSITY OF KENTUCKY											
WOMEN, U.S. CITIZENS					1					1	
FOREIGN NATIONALS - ALL CURRICULA					1					0	
MARYLAND											
JOHNS HOPKINS UNIVERSITY											
WOMEN, U.S. CITIZENS					1					0	
FOREIGN NATIONALS - ALL CURRICULA						2					
MASSACHUSETTS											
HARVARD UNIVERSITY											
ORIENTAL, U.S. CITIZENS					1		0			0	0
WOMEN, U.S. CITIZENS					0		3			0	1
FOREIGN NATIONALS - ALL CURRICULA					1		0			0	0
LOWELL TECHNOLOGICAL INSTITUTE											
ORIENTAL, U.S. CITIZENS											
SPANISH SPEAKING U.S. CITIZENS			1								
WOMEN, U.S. CITIZENS			1					1			
FOREIGN NATIONALS - ALL CURRICULA	2		3					1			
	3		1								

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MINORITIES, WOMEN
AND
FOREIGN NATIONALS
ENROLLMENTS AND DEGREES BY SCHOOLS
RADIATION PROTECTION

STATE - INSTITUTION	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
MICHIGAN											
UNIVERSITY OF MICHIGAN											
SPANISH SPEAKING U.S. CITIZENS							1				
FOREIGN NATIONALS - ALL CURRICULA						1		1			
MINNESOTA											
UNIVERSITY OF MINNESOTA											
SPANISH SPEAKING U.S. CITIZENS					0			1			
WOMEN, U.S. CITIZENS					3			0			
NEW JERSEY											
RUTGERS UNIVERSITY											
WOMEN, U.S. CITIZENS					2	2	0	0	0	3	0
FOREIGN NATIONALS - ALL CURRICULA					2	2	0	0	0	0	0
NEW YORK											
MANHATTAN COLLEGE											
SPANISH SPEAKING U.S. CITIZENS		6									
BLACKS, U.S. CITIZENS		17		3							
WOMEN, U.S. CITIZENS		12									
N.Y.U. MEDICAL CENTER											
WOMEN, U.S. CITIZENS					2	2	1	5		3	
FOREIGN NATIONALS - ALL CURRICULA							3				
SLOANE-KETTERING DIV - CORNELL UNIVERSITY											
WOMEN, U.S. CITIZENS					1						
UNIVERSITY OF ROCHESTER											
SPANISH SPEAKING U.S. CITIZENS						1					
WOMEN, U.S. CITIZENS							2				1
FOREIGN NATIONALS - ALL CURRICULA					1		4			2	
NORTH CAROLINA											
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL											
BLACKS, U.S. CITIZENS					1	0				0	
FOREIGN NATIONALS - ALL CURRICULA					0	1				0	
OKLAHOMA											
UNIVERSITY OF OKLAHOMA											
WOMEN, U.S. CITIZENS							1				

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MINORITIES, WOMEN
AND
FOREIGN NATIONALS
ENROLLMENTS AND DEGREES BY SCHOOLS
RADIATION PROTECTION

STATE - INSTITUTION	ENROLLMENT FALL 1973								DEGREES GRANTED JULY 1972 - JUNE 1973		
	JUNIOR		SENIOR		MASTER		DOCTORATE				
	FT	PT	FT	PT	FT	PT	FT	PT	BACH	MASTER	PHD
PENNSYLVANIA											
DUQUESNE UNIVERSITY											
WOMEN, U.S. CITIZENS			1								
TEMPLE UNIVERSITY											
WOMEN, U.S. CITIZENS	2		0								
FOREIGN NATIONALS - ALL CURRICULA					1						
UNIVERSITY OF PENNSYLVANIA											
WOMEN, U.S. CITIZENS								1			
UNIVERSITY OF PITTSBURGH											
WOMEN, U.S. CITIZENS					2						
PUERTO RICO											
UNIVERSITY OF PUERTO RICO, RIO PIEDRAS											
SPANISH SPEAKING U.S. CITIZENS					2	1					
BLACKS, U.S. CITIZENS						1					
FOREIGN NATIONALS - ALL CURRICULA					2						
TENNESSEE											
UNIVERSITY OF TENNESSEE, KNOXVILLE											
WOMEN, U.S. CITIZENS							1				
FOREIGN NATIONALS - ALL CURRICULA					5		1				
VANDERBILT UNIVERSITY											
BLACKS, U.S. CITIZENS											1
FOREIGN NATIONALS - ALL CURRICULA					1					1	1
TEXAS											
TEXAS A & M UNIVERSITY											
WOMEN, U.S. CITIZENS										1	
FOREIGN NATIONALS - ALL CURRICULA							1				
WASHINGTON											
UNIVERSITY OF WASHINGTON											
ORIENTAL, U.S. CITIZENS					1						
FOREIGN NATIONALS - ALL CURRICULA					3						

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APPENDIX 4

ENROLLMENTS AND DEGREES BY SUBFIELDS
RADIATION PROTECTION

CURRICULUM OR OPTION	ENROLLMENTS FALL 1973 JUNIOR YEAR	SENIOR YEAR	MASTER	DOCTORATE	DEGREES GRANTED JULY 1972 - JUNE 1973 DEGREES BACH	DEGREES MASTER	DEGREES PHD
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	47	43	206	105	16	106	27
RADIOBIOLOGY OR BIOPHYSICS	16	32	20	170	27	13	27
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS	6	2	49	51	0	19	6
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION	3	4	7	1	3	5	2
NUCLEAR MEDICINE BASIC SCIENCES	3	0	0	0	0	0	0
ENVIRONMENTAL HEALTH	15	3	4	12	5	4	6
RADIOLOGY ADMINISTRATION	11	4	4	0	0	6	0
RADIATION CHEMISTRY	0	0	1	1	0	0	0
ENVIRONMENTAL RADIOACTIVITY	0	0	0	1	0	0	0
AEROSOL PHYSICS	0	0	0	5	0	0	1
RADIOLOGICAL SCIENCE	0	1	11	0	0	1	0
RADIATION BIOPHYSICS	2	1	2	0	2	0	1
RADIOPHARMACY	7	5	1	0	8	0	0
VETERINARY RADIOLOGY	0	0	1	1	0	0	0
NUCLEAR PHYSICS	0	0	1	4	0	0	1
GRAND TOTAL	110	95	307	351	61	154	71

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APPENDIX 5

RADIATION PROTECTION
CURRICULUM OR OPTION BY INSTITUTION
FALL 1973

CURRICULUM OR OPTION	INSTITUTION
HEALTH PHYSICS, RADIATION HEALTH OR RADIATION PROTECTION	
	COLORADO STATE UNIVERSITY
	DUQUESNE UNIVERSITY
	EMORY UNIVERSITY
	GEORGIA INSTITUTE OF TECHNOLOGY
	HARVARD UNIVERSITY
	LOWELL TECHNOLOGICAL INSTITUTE
	MANHATTAN COLLEGE
	N.Y.U. MEDICAL CENTER
	NORTH CAROLINA STATE UNIVERSITY AT RALEIGH
	NORTHWESTERN UNIVERSITY
	PURDUE UNIVERSITY
	RENSSELAER POLYTECHNIC INSTITUTE
	RUTGERS UNIVERSITY
	TEMPLE UNIVERSITY
	TEXAS A & M UNIVERSITY
	UNIVERSITY OF ALABAMA IN BIRMINGHAM
	UNIVERSITY OF CALIFORNIA, BERKELEY
	UNIVERSITY OF FLORIDA
	UNIVERSITY OF KANSAS
	UNIVERSITY OF KENTUCKY
	UNIVERSITY OF MIAMI
	UNIVERSITY OF MICHIGAN
	UNIVERSITY OF MINNESOTA
	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
	UNIVERSITY OF OKLAHOMA
	UNIVERSITY OF PITTSBURGH
	UNIVERSITY OF PUERTO RICO, RIO PIEDRAS
	UNIVERSITY OF TENNESSEE, KNOXVILLE
	UNIVERSITY OF WASHINGTON
	VANDERBILT UNIVERSITY
RADIOBIOLOGY OR BIOPHYSICS	
	COLORADO STATE UNIVERSITY
	GEORGIA INSTITUTE OF TECHNOLOGY
	HARVARD UNIVERSITY
	JOHNS HOPKINS UNIVERSITY
	PURDUE UNIVERSITY
	RUTGERS UNIVERSITY
	SLOANE-KETTERING DIV - CORNELL UNIVERSITY
	TEXAS A & M UNIVERSITY
	UNIVERSITY OF ALABAMA IN BIRMINGHAM
	UNIVERSITY OF CALIFORNIA, BERKELEY
	UNIVERSITY OF ILLINOIS AT URBANA
	UNIVERSITY OF IOWA
	UNIVERSITY OF KANSAS
	UNIVERSITY OF ROCHESTER
	UNIVERSITY OF WASHINGTON

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TABLE IV

RADIATION PROTECTION
CURRICULUM OR OPTION BY INSTITUTION
FALL 1973

CURRICULUM OR OPTION	INSTITUTION
MEDICAL RADIATION PHYSICS OR RADIOLOGICAL PHYSICS	
	HARVARD UNIVERSITY
	JOHNS HOPKINS UNIVERSITY
	MANHATTAN COLLEGE
	PURDUE UNIVERSITY
	SLOANE-KETTERING DIV - CORNELL UNIVERSITY
	UNIVERSITY OF CALIFORNIA, BERKELEY
	UNIVERSITY OF CALIFORNIA, LOS ANGELES
	UNIVERSITY OF CINCINNATI
	UNIVERSITY OF FLORIDA
	UNIVERSITY OF KANSAS
	UNIVERSITY OF KENTUCKY
	UNIVERSITY OF PENNSYLVANIA
	UNIVERSITY OF WASHINGTON
	VANDERBILT UNIVERSITY
ENGINEERING OR BASIC SCIENCES, HEALTH PHYSICS OPTION	
	COLORADO STATE UNIVERSITY
	GEORGIA INSTITUTE OF TECHNOLOGY
	NORTHWESTERN UNIVERSITY
	UNIVERSITY OF CALIFORNIA, BERKELEY
	UNIVERSITY OF FLORIDA
	UNIVERSITY OF ILLINOIS AT URBANA
	VANDERBILT UNIVERSITY
NUCLEAR MEDICINE BASIC SCIENCES	
	MANHATTAN COLLEGE
ENVIRONMENTAL HEALTH	
	PURDUE UNIVERSITY
RADIOLOGY ADMINISTRATION	
	MANHATTAN COLLEGE
	UNIVERSITY OF CINCINNATI
RADIATION CHEMISTRY	
	RUTGERS UNIVERSITY

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TABLE IV

RADIATION PROTECTION
CURRICULUM OR OPTION BY INSTITUTION
FALL 1973

CURRICULUM OR OPTION	INSTITUTION
ENVIRONMENTAL RADIOACTIVITY	
	RUTGERS UNIVERSITY
AEROSOL PHYSICS	
	RUTGERS UNIVERSITY
RADIOLOGICAL SCIENCE	
	EMORY UNIVERSITY
	LOWELL TECHNOLOGICAL INSTITUTE
RADIATION BIOPHYSICS	
	UNIVERSITY OF KANSAS
RADIOPHARMACY	
	TEMPLE UNIVERSITY
VETERINARY RADIOLOGY	
	COLORADO STATE UNIVERSITY
NUCLEAR PHYSICS	
	VANDERBILT UNIVERSITY

APPENDIX 6

UNITED STATES

ATOMIC ENERGY COMMISSION

WASHINGTON, D.C. 20545

NOV 2 1973

Dear Sir:

Enclosed are the forms for obtaining information on radiation protection enrollments for this fall and graduates during the past academic year. We are anxious to receive your response as quickly as possible, as the information derived from your response and those of other radiation protection faculty has proved to be useful far beyond the AEC management function for which the survey was designed. For example, the report has been used by AEC and several private firms as a recruitment tool, directing would-be employers to schools producing a particular type of radiation protection graduate.

You may note a few changes in this year's form, but the basic information will tie in with that reported previously. The breakouts for sex and minority information result from numerous requests for such information as well as to satisfy our own needs. The placement data supplied last year were of great value for making manpower projections, so we would be very grateful if your response to these questions is as complete as last year.

If there are any problems in completing the questionnaire, please place a collect call to Mrs. June S. Chewning, Acting Chief, Manpower Information Systems Branch, at 301 973-4417. We would appreciate a reply by November 12, 1973, at the latest. Thank you for treating this as a high priority request.

Sincerely,

H. T. Herrick, Director
Division of Labor Relations

Enclosures:
As stated

Form AEC-417
(10-73)

IMPORTANT *Please see instructions on reverse side before completing this form.*

U.S. ATOMIC ENERGY COMMISSION
RADIATION HEALTH AND RADIATION SAFETY (HEALTH PHYSICS) ENROLLMENT AND DEGREE SURVEY

OMB No. 38-R0176
Approval Expires March 1977

Name of Institution | City | Zip Code

Department(s) Reporting | A1

Name of Official Supplying Data

Title of Official Supplying Data | Area Code | Telephone Number | A2

SCHOOL NUMBER	Curriculum or Option (See Instruction 4.) (Write in those not listed) ENGINEERS	CODE	ENROLLMENT FALL 19 73 UNDERGRADUATES Junior Year Full-Time	Junior Year Part-Time	Senior Year Full-Time	Senior Year Part-Time	MASTER CANDIDATES Full-Time	MASTER CANDIDATES Part-Time	DOCTORATE CANDIDATES Full-Time	DOCTORATE CANDIDATES Part-Time	DEGREES GRANTED July 19 72 - June 19 73 Bachelor	Master	Doctorate	CARD
1 6		7 8	9 10	11 12	13 14	15 16	17 18	19 20	21 22	23 24	25 26	27 28	29 30	79 80
	Health Physics, Radiation Health, or Radiation Protection	10												11
	Radiobiology or Biophysics	20												11
	Medical Radiation Physics or Radiological Physics	30												11
	Engineering or Basic Sciences, Health Physics Option	40												11
	Other (Specify)	5												11
	TOTAL ▶													
• *Please break out the following from the totals reported above.*														
	Women, U.S. Citizens	70												11
	Blacks, U.S. Citizens	72												11
	Spanish-speaking, U.S. Citizens	73												11
	Oriental, U.S. Citizens	74												11
	Native American Indians	75												11
	Foreign Nationals	60												11

Data supplied above may be published in listings by individual institutions

Authorized Signature *Date*

Remarks:

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UNITED STATES ATOMIC ENERGY COMMISSION
Division of Labor Relations
Washington, D.C. 20545

Radiation Health and Radiation Safety (Health Physics)
Enrollment and Degree Survey

INSTRUCTIONS FOR COMPLETING FORM AEC-617

This survey is conducted by the Atomic Energy Commission as part of its continuing effort to assure itself and its contractors a supply of well prepared experts in the nuclear field. With this questionnaire we hope to determine, by degree level, the yearly supply and anticipated supply of those trained in health physics, radiation health or safety, radiological health, or similar programs, who would be qualified to be responsible for some major phase of a program for the evaluation and control of radiation hazards.

PLEASE READ THE FOLLOWING INSTRUCTIONS BEFORE FILLING OUT THE QUESTIONNAIRE:

Instr. a. **Curriculum.** Using a separate line for each major program, report only curricula which prepare students to participate in conducting, coordinating, directing, or planning a program for the evluation and control of radiation hazards for an installation, community, or state agency.

Instr. b. Report only students enrolled definitely as candidates for a degree. Report co-op students* as being enrolled full-time. If exact figures are not available, please give best estimate and indicate by "E" after the estimated number.

Instr. c. **Pre-Doctoral Degree.** Enrollments for professional degrees beyond the bachelor's are to be included with master's degree enrollments to simplify this report. Also see Instr. d.

Instr. d. **Doctoral Programs.** Report only enrollments specifically leading to a doctor's degree. If ultimate degree is uncertain, report as master candidates.

Instr. e. **Women, Minorities, Foreign Students.** Requests for information about women and minorities are numerous. The number of foreign nationals is important to predicting manpower supplies. Therefore, please provide as accurate a breakout as possible. Blanks will be teated as zeros.

* For purposes of this survey, a co-op student is defined as one who alternates sessions of schooling with sessions of employment in a position related to his academic specialty.

Radiation Protection Degree Survey Supplement

Reporting Institution _____ Date _____

Please indicate placement of degree recipients reported on AEC Form 617:

Placement or plans after graduation (Please show in paren. numbers returning to previously held positions)	Degree Recipients July 1972-June 1973		
	Bachelor	Master	Doctor
a. Further study			
b Academic employment (students employed part time should be shown in a.; also see f.)			
c. U. S. Government employment			
d. GOCO (Gov.-owned, Contractor-operated installations) employment			
e. State and Local Government employment			
f. Medical facilities (including teaching hospitals) employment			
g. Industry employment			
h. Military service			
i. Unknown			

U.S. GOVERNMENT PRINTING OFFICE: 1974—585—748/63